Chapter 4 – Quiz Answers

Circle the letter of the one correct answer in each of the following statements.

1. With a test load of 10 000 lb, an axle-load scale with a weighbeam has a tolerance of 20 lb. Which of the following would be within tolerance?

a. 9 960 lb.

b. 9 980 lb.

c. 10 040 lb.

2. When a test load of 8 000 lb is placed on the deck (and no tare taken), the scale displays 7 990 lb. The scale has an error of:

a. overregistration.

b. underregistration.

3. Acceptance tolerances apply to:

a. vehicle or axle-load scales returned to service less than 60 days ago.

b. vehicle or axle-load scales newly installed less than 60 days ago.

c. vehicle or axle-load scales returned to service less than 30 days ago.

4. The test loads to apply during the Decreasing-Load Test are:

a. at tolerance breakpoints for scales marked IIIL.

b. at tolerance breakpoints for scales not marked IIIL.

c. at one-half the maximum test load applied in the Increasing-Load Test for scales marked IIIL.

d. at one-half the maximum test load applied in the Increasing-Load Test for all vehicle and axle-load scales.

5. You are performing a Shift Test with a test load of 15 000 lb on a 140 000 x 20 lb vehicle scale that has been placed in service for the first time within the last 30 days. The range of results you obtain during the Shift Test must not exceed:

a. 10 lb

b. 20 lb

c. 30 lb

d. <u>40 lb</u>

6. For scales with a capacity over 40 000 lb, the recommended amount of test load to be applied during the scale test is:

a. listed in the applicable EPO for the scale under test.

b. <u>to be at least 12.5% of capacity or 10 000 lb of certified test weights, whichever is greater, and a total test load of up to 25% capacity..</u>

c. to be at least 25% of capacity or 10 000 lb of certified test weights, whichever is greater, and a total test load of up to 40% of capacity.

7. The maximum load permitted to be applied to a test pattern on a 2-sectipon scale with a capacity of 100 000 lb and a concentrated load capacity marked 80 000 lb is:

a. 40 000 lb.

b. 50 000 lb.

c. <u>80 000 lb.</u>

d. 100 000 lb.

e. other

8. A vehicle scale with eight load-bearing supports has:

a. 2 sections.

b. <u>4 sections.</u>

c. 8 sections.

d. 16 sections.

e. cannot determine from information given.

Part 2

Circle the letter for the correct term that matches the following definitions.

9. A special supplementary test for automatic-indicating scales only, during which the performance of the scale is tested when the load is being reduced.

a. Repeatability

b. Decreasing-load Test

c. Shift Test

10. A process of testing a scale, usually of large capacity, which involves the application of an unknown weight value (preferably less than the available test load), and then noting the increase in weight indication resulting from the application of the available test weight load.

a. Shift Test

b. Increasing-Load Test

c. Strain-Load Test

11. A value fixing the limit of allowable error or departure from the true performance or value.

a. Tolerance

b. Repeatability

c. Sensitivity requirement (SR)

12. The maximum difference between readings for repeated loadings under identical loading and environmental conditions.

a. maintenance tolerance

b. repeatability

c. tolerance

d. acceptance tolerance

Part 3

Construct tolerance worksheets for each of the scales described below, using the worksheets on the following pages. Be sure to select the proper tolerance worksheet to use for each problem (the worksheets on the following pages are <u>not</u> necessarily in the correct order). You may refer to Table 6 in the Scales Code.

1. Construct a tolerance worksheet for the following scale.

Beam capacity:	100 000 lb
Fractional bar capacity:	990 x 10 lb
Section capacity:	50 000 lb
Scale capacity:	100 000 lb
Value of scale division:	10 lb
Available certified test weights:	20 000 lb

Scale is not marked IIIL
Maintenance tolerances apply

2. Construct a tolerance worksheet for the following scale.

Dial capacity:	20 000 lb
Four unit weights, each:	20 000 lb
Scale capacity:	100 000 lb
CLC:	60 000 lb
Value of scale division:	20 lb
Available certified test weights:	30 000 lb

Scale is marked IIIL
Acceptance tolerances apply

3. Construct a tolerance worksheet for the following scale.

Electronic digital scale

CLC:	40 000 lb
Scale capacity:	100 000 lb
Value of scale division:	20 lb
Available certified test weights:	25 000 lb

Scale is marked IIIL
Acceptance tolerances apply

4. Construct a tolerance worksheet for the following scale.

Electronic digital axle-load scale

CLC:	50 000 lb
Scale capacity:	60 000 lb
Value of scale division:	10 lb
Available certified test weights:	30 000 lb

Scale is marked IIIL
Maintenance tolerances apply